ESTES
A DAMON COMPANY
INSIDE! Valuable Bonus Coupons Worth Up to $48.87 In Discounts and Special Offers!
See pages 13 and 17
FLYING MODEL ROCKETS
SPRING 1983
Now You Can Charge Your Order On VISA or Master Charge!
VISA
master charge
See the enclosed order form.

DESIGNER'S SPECIAL

Ideal parts assortment for the creative rocketeer. Develop your own R & D Program. Over 75 pieces at an excellent savings!

Body Tubes
2 BT-5
2 BT-20
2 BT-50
1 BT-55
1 BT-60

Nose Cones
1 BNC-5E
1 BNC-5S
1 BNC-20B
1 BNC-20R
1 PNC-50KA
1 PNC-50Y
1 PNC-55AC
1 PNC-60L

Fin Material
2 BFS-20
2 BFS-30
2 BFS-40

Parachutes
1 PK-10
2 PK-12
1 PK-18
1 PK-24

Recovery Equipment
3 Shock Cord 1/8" x 18"
1 Shock Cord 1/8" x 36"
1 Shock Cord 1/4" x 36"
1 Streamer Material 1" x 30"
6 Screw Eyes

Miscellaneous
3 Engine Blocks (EB-20A)
3 Engine Holders (EH-3)
3 Engine Holders (EH-2)
1 Engine Mount (EH-2050)
1 Engine Mount (EH-2060)
1 Nose Block (NB-20)
1 Nose Block (NB-50)
1 Stage Coupler (JT-55C)
1 Stage Coupler (JT-60C)
1 Balsa Adapter (TA-2050A)
1 Multi-Purpose Paper Adapter Set (TA-1)
12 Launch Lugs (2-3/8" Long)
1 Alpha Book of Model Rocketry
1 Fin Pattern Sheet No. 2
1 Fin Pattern Sheet No. 3

Ship. Wt. 2 lbs.

No. 1463 . . . . . Reg. ~~$19.05~~

Mini Engine Special!

20% OFF SAVE $2.45
See page 13 for Bonus Coupon

Big $12.45 Value

Receive 4 1/2A3-2T, 4 A3-2T and 8 A3-4T High Performance Estes Mini Engines plus Solar Igniters. A total of 16 Popular Mini Engines. Ship. Wt. 1 lb.

NO. 1732.....ONLY $10.00

ESTES
A DAMON COMPANY

(18) Parachute & Size
Quick-Release Engine Mount
Plastic Nose Cone
Die-Cut Balsa Fins or Paper Parts
Kit Decals
Streamer Recovery
Balsa Nose Cone
Plastic Fins or Fin Unit

Unless otherwise stated, all the model rocketry kits in this catalog are hobby kits requiring assembly. Launch system, engines, glue and finishing supplies are not included. Recommended for ages 10 to adult. Adult supervision suggested for those under 12 years of age when flying model rockets.

©Estes Industries, 1983

ESTES®

ICARUS

SKILL LEVEL 1 High altitude payload vehicle with see-through cargo section. Achieve flights of over 1,000 feet with lightweight payload. Simulated sounding rocket appearance with dual roll pattern decor. Length: 20.8" Dia. 0.976" Wt. 1.3 oz.
ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.
No. 1277 Ship Wt. 12 oz.
$6.50

(12)

NASA PEGASUS

SKILL LEVEL 2 Medium range research craft for NASA missions after the Space Shuttle. Flies over 850 feet. Length: 19.75" Dia. 1.325" Wt. 2.36 oz.
ENGINES: A8-3 (1st Flt.), B4-2, B6-4, B8-5, C5-3, C6-3.
No. 1376 Ship Wt. 12 oz.
$6.50

(18)

"FREE"
24" Bright Red and Silver MYLAR PARACHUTE (worth $1.75) when you purchase any one of these kits.
See page 13 for Bonus Coupon.

X-RAY

SKILL LEVEL 1 Perfect for your first payloader or second kit. Features large see-through payload/cargo section. The recommended single-stage payload vehicle for small biological or insect projects. Length: 16.75" Dia. 0.736" Wt. 0.7 oz.
ENGINES: 1/2A6-2, A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.
No. 1218 Ship Wt. 12 oz.
$6.50

(12)

GALACTIC TAXI

SKILL LEVEL 3 Lightweight 3 passenger planet hopping taxi. Flights to 1,000 feet with 12″ parachute recovery. Ideal display model and impressive in the air. Length: 13″ Dia. 0.976″ Wt. 1.27 oz.
ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.
No. 1914 Ship Wt. 12 oz.
$6.00

U.S.S. PLEIADES

SKILL LEVEL 3 Two-stage exotic space fighter. Our engineer's concept of a futuristic space interceptor. Flights to 900 feet. Length: 20.625″ Dia. 1.325″ Wt. 2.3 oz.
ENGINES: Single Stage: A8-3, B4-4 (1st Flt.), B6-4, B8-5, C6-5.
Upper Stage: A8-5 (1st Flt.), B4-6, B6-6, C6-7.
Booster: A8-0 (1st Flt.), B6-0, C6-0.
No. 1910 Ship Wt. 12 oz.
$6.50

COURIER

SKILL LEVEL 1 Single Stage Performance. Scale-like appearance of two-stage sounding rocket. Flights over 1100 feet. Length: 12.13″ Dia. 0.736″ Wt. 0.53 oz.
ENGINES: 1/2A6-2, A8-5 (1st Flt.), B4-4, B4-6, B6-4, B6-6, B8-5, C6-5, C6-7.
No. 1911 Ship Wt. 12 oz.
$2.75 Value

SCRAMBLER: 2

SKILL LEVEL 3 "D" powered payloader for those fragile biological payloads. Try launching a fresh egg! Flights over 1,000 feet. Length: 25.4″ Body Dia. 1.32″ Payload Dia.: 1.64″ Wt. 3.2 oz.
ENGINES: D12-5
No. 1908 Ship Wt. 15 oz.
$6.95

NOVA SCOUT SHIP

SKILL LEVEL 2 Scout ship of the awesome Star Ship Nova intergalactic explorer. Designed for planetary exploration. Flies to 900 feet. Length: 15″ Dia. 0.976″ Wt. 1.29 oz.
ENGINES: A8-3 (1st Flt.), B4-2, B4-4, B6-4, B8-5, C6-3, C6-5.
No. 1392 Ship Wt. 12 oz.
$5.00

AIRBORNE SURVEILLANCE MISSILE

SKILL LEVEL 3 Unique scale-like appearance and a challenge to build. Length: 11.4″ Dia. 0.976″ Wt. 0.71 oz.
ENGINES: A3-4T (1st Flt.), A10-3T.
No. 0867 Ship Wt. 10 oz.
$3.50

APACHE 2

SKILL LEVEL 3 Ultra-high performance two-stager with unique kit decal. Streamer for reliable high-altitude recovery. Capable of flights over 2500 feet. Length: 18.25″ Dia. 0.976″ Wt. 1.34 oz.

ENGINES: Single Stage: 1/2A6-2, A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.
Upper Stage: 1/2A6-4, A8-5 (1st Flt.), B4-6, B6-6, C6-7.
Booster: A8-0 (1st Flt.), B6-0, C6-0.

No. 1388 Ship Wt. 12 oz.
$5.00

SANDPIPER

SKILL LEVEL 2 Semi-scale model of actual target drone. Impressive in the air and on display. Spectacular flights over 900 feet. Length: 14.3″ Dia. 0.976″ Wt. 1.0 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1389 Ship Wt. 12 oz.
$5.50

ADVANCED TARGET DRONE

SKILL LEVEL 2 U.S.A.F. Target Drone used to test the surface-to-air missiles of the 21st Century. Although it looks complex, the A.T.D. is fast and easy to build. Length: 15.3″ Dia. 0.976″ Wt. 1.48 oz.

ENGINES: A8-3, B4-4 (1st Flt.), B6-4, B8-5, C6-5.

No. 1913 Ship Wt. 12 oz.
$6.00

SEA DART

SKILL LEVEL 2 Semi-scale model of the British Aerospace Sea Dart surface-to-air missile. Used succesfully in the Falkland's battles. Flights over 800 feet on a C engine. Length: 16.5″ Dia. 1.325″ Wt. 1.7 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, C6-5.

No. 1901 Ship Wt. 12 oz.
$6.00

U.S.S.F. FIREFLASH

SKILL LEVEL 3 High performance U.S. Space Force fighter craft. Features new Space Force color scheme and is armed with two gattling barreled infra-iscopic laser cannon. Flights to 900 feet. Length: 16″ Dia. 0.976″ Wt. 1.7 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1909 Ship Wt. 12 oz.
$6.50

XARCONIAN DESTROYER

SKILL LEVEL 3 Futuristic battle cruiser featuring organic design. Beautifully detailed and capable of flights over 750 feet. Eighteen inch parachute recovery. Length: 14.7″ Dia. 1.325″ Wt. 2.2 oz.

ENGINES: A8-3 (1st Flt.), B4-2, B4-4, B6-2, B6-4, B8-5, C5-3, C6-3, C6-5.

No. 1903 Ship Wt. 12 oz.
$6.50

SCISSOR-WING TRANSPORT

SKILL LEVEL 3 This exciting bird introduces the revolutionary new Scissor Wing concept. Features super SST styling and high flight reliability. Capable of glide times of more than 60 seconds. Internal ejection power pod features vertical stabilizer fins. Comes ready-to-assemble with die-cut parts and two-color decals. Length: 22.75″ Body Dia. 0.976″ Wing Span 16″ Wt. w/pod 2.5 oz. w/out pod 1.8 oz.
ENGINES: B4-2 (1st Flt.), B6-2, C5-3, C6-3.
No. 1265 Ship Wt. 12 oz.
$10.00

ORBITAL TRANSPORT

SKILL LEVEL 4 Only a gleam in the eye of NASA, but it's flying for Estes rocketeers right now! Astonishingly realistic recovery system where mothership returns to Earth via huge 18″ parachute and interplanetary orbiter glides home. Long and sleek, developed for both orbital and near-space missions. Transport vehicle and glider fly piggy-backed and separate at apogee for spectacular dual recovery. TRANSPORT SHIP Length: 23″ Dia. 0.976″ Wing Span 7.9″ Wt. 2 oz. RE-ENTRY VEHICLE Length: 8.6″ Dia. 0.736″ Wing Span 5″ Wt. 0.5 oz.
ENGINES: B4-2, B4-4, B6-2, B6-4 (1st Flt.), B8-5, C6-5.
No. 1242 Ship Wt. 12 oz.
$9.50

STARSHIP VEGA

SKILL LEVEL 3 Exotic planetary exploration vehicle featuring simulated landing shocks. A great performer with impressive lift-off and recovery. Science fiction styling gives this bird a real spaceship look. Length: 19.5″ Dia. 0.976″ Wt. 1.88 oz.
ENGINES: A8-3, B4-2, B4-4, B6-2, B6-4 (1st Flt.), B8-5, C6-5, C6-7.
No. 1320 Ship Wt. 12 oz.
$8.75

STARFIGHTER COMBO KIT

SKILL LEVEL 3

ORION STARFIGHTER

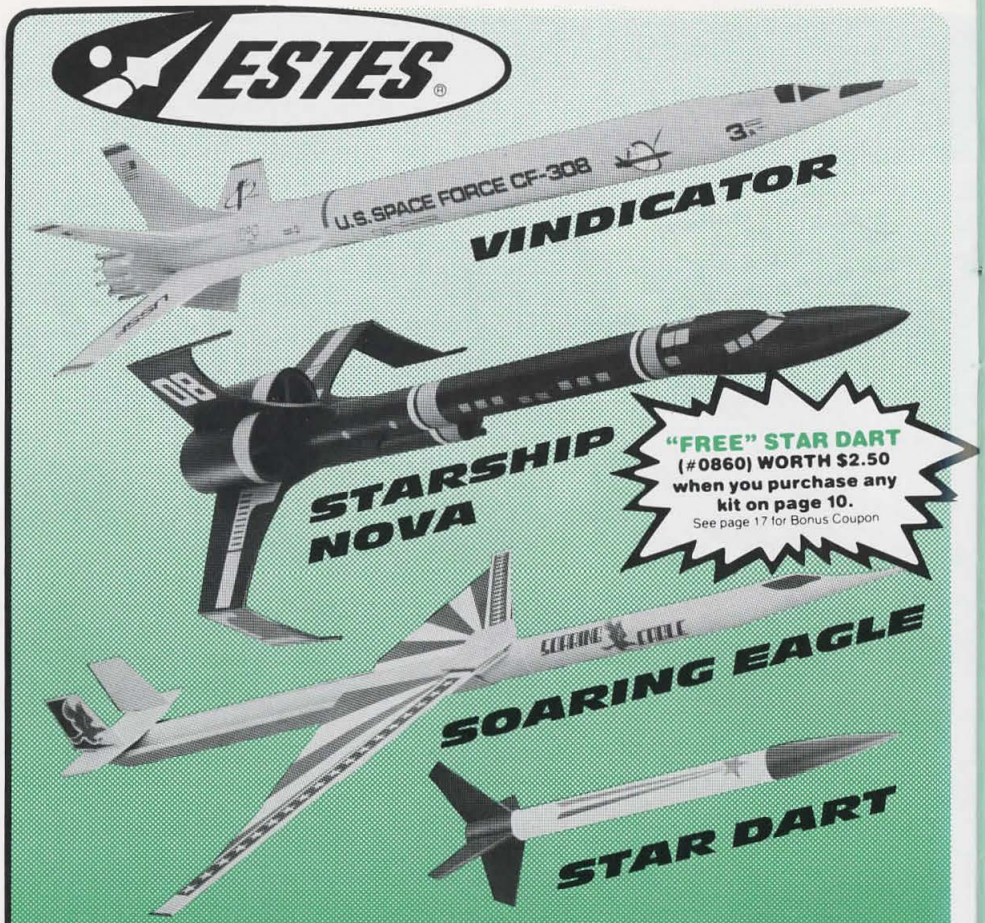
Perimeter defense starfighter for the Orion cluster. Outfitted with white plasma energy shield and Estegon crystal engines for star-streak acceleration. Length: 20.25″ Dia. 0.976″ Wt. 1.115 oz.
ENGINES: A8-3, B4-2, B4-4 (1st Flt.), B6-2, B6-4, B8-5, C6-5, C6-7.

TORELLIAN INVADER

Galactic invader and primary attack fighter from the Torellian Empire. Capable of deploying Zarchronian space mines and launching photon torpedoes. Length: 20″ Dia. 0.976″ Wt. 1.291 oz.
ENGINES: A8-3, B4-2, B4-4 (1st Flt.), B6-2, B6-4, B8-5, C6-5, C6-7.

ORION STARFIGHTER & TORELLIAN INVADER COMBINATION KIT

No. 1343 Ship Wt. 12 oz.
$11.00



"FREE" STAR DART
(#0860) WORTH $2.50 when you purchase any kit on page 10.
See page 17 for Bonus Coupon

VINDICATOR

SKILL LEVEL 3 Sleek interplanetary interceptor with futuristically detailed nose cone. A really sharp display model with starfight camouflage decor. Great demonstration model with flights up to 900 feet. Length: 25.5" Dia. 1.325" Wt. 2.6 oz.
ENGINES: B4-2, B6-2, B6-4, (1st Flt.), B8-5, C6-3, C6-5.
No. 1367 Ship Wt. 12 oz.
$7.50

STARSHIP NOVA

SKILL LEVEL 3 Truly awesome in appearance, this inter-galactic explorer is believed to be outfitted with both conventional atomic engines and hyper-space starflight drive. The Estes version of the magnificient starship is perfect for demonstrations and really great for display. Length: 19.75" Dia. 0.976" Wt. 2.3 oz.
ENGINES: B4-2 (1st Flt.), B6-2, C5-3, C6-3.
No. 1371 Ship Wt. 12 oz.
$7.50

SOARING EAGLE

SKILL LEVEL 4 Estes' first flex-wing glider.Goes up like a rocket, pod ejects and wings unfold. Glide times up to 2 minutes. Length: 23.6" Dia. 0.976" Wt. 2.42 oz.
ENGINES: B4-2 (1st Flt.), B6-2, B8-5, C5-3, C6-3. Ship Wt. 12 oz.
No. 1373
$7.75

STAR DART

SKILL LEVEL 1 High performance, mini-engine powered sport rocket. Flies over 1,000 feet and returns via streamer recovery. Very easy-to-assemble. Length 8.4" Dia. 0.541" Wt. 0.225 oz.
ENGINES: 1/2A3-4T (1st Flt.), A3-6T
No. 0860 Ship Wt. 9 oz.
$2.50 Value

ESTES ASTROCAM 110™

Aerial Camera With DELTA II Rocket

"FREE" FILM
Receive A Free Roll Of 110 Color Print Film (ASA 400) (worth $2.50) When You Purchase An AstroCam 110 With Delta II Rocket!
See Page 17 for Bonus Coupon

Actual "AstroCam 110" photo of Three Mile Island Facility, Middletown, PA. Taken by Scott Pearce, Westchester, PA.

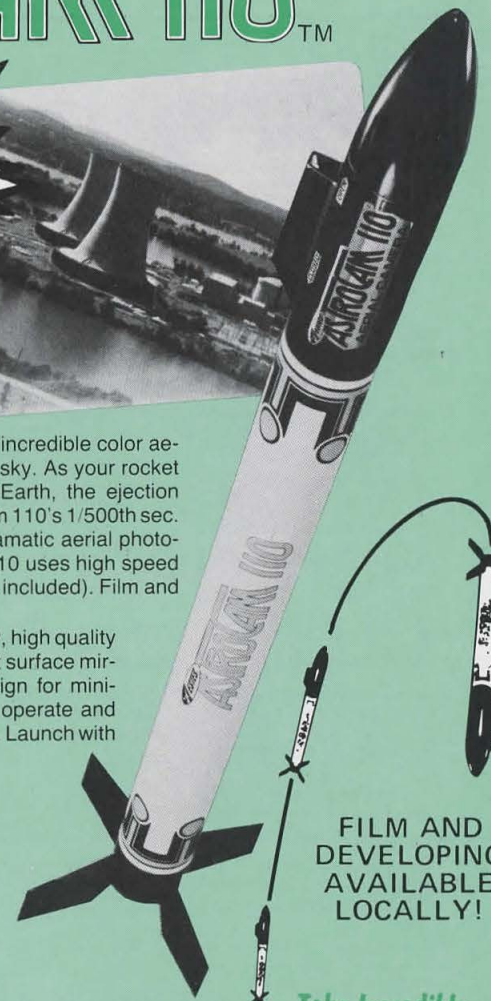
Skill Level 2

Experience the thrill and excitement of taking incredible color aerial photographs from hundreds of feet in the sky. As your rocket reaches apogee and begins its descent to Earth, the ejection charge of your rocket engine trips the AstroCam 110's 1/500th sec. shutter and "snap"...you have just taken a dramatic aerial photograph from far above. The "new" AstroCam 110 uses high speed 100 color print film ASA 400 or equivalent (not included). Film and developing are available locally.

Special features include easy, quick-assembly, high quality acrylic lens, molded plastic housing, glass first surface mirror, and high performance aerodynamic design for minimum drag and maximum altitude. Simple to operate and shoots one, crisp, full color 110 photo per flight. Launch with B8-5, B8-7, C6-5, or C6-7 engine.

Delta II launch vehicle features specially designed, pre-colored plastic fin-unit for consistently smooth and stable flights. Plus white body tube, quick-release engine mount and great looking, two-color kit decals with dual roll patterns. No painting required! Returns to Earth via 12" parachute.

(Launch System, engines, glue, and film are not included.)



FILM AND DEVELOPING AVAILABLE LOCALLY!

Take Incredible "Color" Aerial Photos From Hundreds of Feet In The Sky!

Specifications - Camera with Launch Vehicle
Length 19.1" (48.5 cm)
Diameter 1.34" (35.3 mm)
Weight 3.75 oz. (106.3g)
Ship. Wt. 14 oz.
Recommended Engines
B8-5 C6-5
C6-7 (First Flight)

Camera Specifications:
Length 6.5" (16.5 cm)
Diameter 1.39" (35.3 mm)
Weight *(Without Film)* 1.36 oz (38.5 g)
Weight *With Film)* 1.76 oz. (50g)

No. 1327....
Only $22.00

FIN ALIGNMENT GUIDE

•QUICK
•EASY
•ACCURATE

SAVE $1.25
FIN ALIGNMENT GUIDE
NOW ONLY $7.00
See Page 17 for Bonus Coupon!

Position and glue fins quickly and easily. Fits body tubes up to BT-101. Designed for either 3 or 4 finned rockets aligning fins at 90° or 120° to each other. Easily assembled with slip-together plastic parts. Adjusts quickly with plastic fin position clips. Ship. Wt. 6 oz.

Cat. No. 2231 **Reg. ~~$8.25~~**

Join the estes aerospace CLUB today!

Join More Than 25,000 Estes Rocketeers Getting The Most Out Of Model Rocketry

SAVE $1.00
SPECIAL EAC MEMBERSHIP
NOW ONLY $5.00
See Page 17 for Bonus Coupon!

You'll discover membership in the Estes AeroSpace Club opens up a whole new world of model rocket activities. Membership is permanent, and your membership kit includes:

- **VIPER ROCKET** — Club's Exclusive High Performance Design.
- **MEMBERSHIP CERTIFICATE** — Suitable for framing.
- **CLUB EMBLEM** — Official iron-on patch. As you progress to higher skill levels, you receive additional iron-on "thrust" bars.
- **DECAL SHEET** — Identify your rockets as part of the EAC fleet!
- **RANGE BOX STICKERS** — Stick-ons for your multi-purpose range equipment.
- **EAC STATIONERY** — Distinctive stationery for notes and letters.
- **MODEL ROCKETRY TECHNICAL MANUAL** — Includes information on construction techniques, finishing, stability, tracking, recovery systems, multi-staging, and boost gliders, plus much, much, more.
- **COPY OF MODEL ROCKET NEWS** — Features free plan designs, technical articles, contest, rocketeer contributions and more.

You Get All This...

Simply Check the EAC box on your order form and include your payment. Shipping Wt. 9 oz.

Regular EAC Membership (#1447) ~~$8.00~~

SPRING 1983 BONUS COUPONS

Save Up to $48.87 In Discounts and Special Offers From This Estes Catalog!

ESTES #7726
WORTH $2.00
Toward the purchase of $20.00 or more from this catalog.
Expires 12-1-'83
SUPER BONUS COUPON

How To Use These Bonus Coupons

When you decide on a purchase from this catalog, look to see if you can use one of the Bonus Coupons. For example if you purchase the Fin Alignment Guide on page 12 you can use the Bonus Coupon which allows you $1.25 toward the purchase of this regularly $8.25 kit.You would cut out the Bonus Coupon....send it in with your order and your check or money order for $7.00 plus handling charge of $1.50.....and you will receive the Fin Alignment Guide for $1.25 off the regular price. Be sure to enclose all Bonus Coupons used with the order form in your return envelope. Only one Bonus Coupon allowed per each kit purchased. Super Bonus Coupon may be used with other Bonus Coupons providing order is $20.00 or more.

You CANNOT use these Bonus Coupons at your retail dealer. All offers expire 12-1-83. Substitutions will be made when necessary. Prices are subject to change without notice. Multiple coupons CANNOT be used for the purchase of a single kit. If order is $20.00 or more Super Bonus Coupon may be used with other Bonus Coupons.

ESTES #7727 — See Page 2
WORTH $2.00
Toward the Purchase of a **Designer's Special Parts Assortment (#1463)**
Expires 12-1-'83
BONUS COUPON

ESTES #7730 — See Page 4
WORTH $2.75
"Free" Courier (#1911)
Worth $2.75 when you purchase any two new Estes kits on pages 4,5,6,&7
Expires 12-1-'83
BONUS COUPON

ESTES #7728 — See Page 2
WORTH $2.45
Toward the Purchase of a **Mini Engine Special #1732**
Expires 12-1-'83
BONUS COUPON

ESTES #7731 — See Page 8
WORTH $3.00
"Free" B6-4 Engines (#1606) (Pkg. of 3 with igniters) Worth $3.00 when you purchase any rocket kit on pages 8&9
Expires 12-1-'83
BONUS COUPON

ESTES #7729 — See Page 3
WORTH $1.75
"Free" 24" Mylar Parachute (#2273) Worth $1.75 when you purchase any of the kits on page 3
Expires 12-1-'83
BONUS COUPON

ESTES #7732 — See Page 10
WORTH $2.50
"Free" Star Dart (#0860) Worth $2.50 when you purchase any kit on page 10
Expires 12-1-'83
BONUS COUPON

DER RED MAX

SKILL LEVEL 2 Far-out super-fun model. Large stable design gives great sport performance. Length: 16.25″ Dia. 1.637″ Wt. 2.38 oz.
ENGINES: B4-2 (1st Flt.), B4-4, B6-2, B6-4, B8-5, C6-5, C6-7
No. 0651 Ship Wt. 10 oz.
$7.50

PATRIOT

SKILL LEVEL 2 Big, burly, and impressive sport model over 25″ tall. Spectacular "All-American" red, white, and blue decor. Makes a great demonstration model. Fast, easy construction. Length: 26″ Dia. 1.637″ Wt. 3.3 oz.
ENGINES: B4-2 (1st Flt.), B4-4, B6-2, B6-4, B8-5, C6-5, C6-7.
No. 0652 Ship Wt. 12 oz.
$8.95

BLUE BIRD ZERO

SKILL LEVEL 2 Experimental sounding design over 3 feet tall. Easy-to-assemble. Delivers high performance flights and gentle recoveries with big 18″ recovery 'chute. Length: 39.75″ Dia. 1.325″ Wt. 2.7 oz.
ENGINES: B4-2, B4-4, B6-2, B6-4 (1st Flt.), B8-5, C6-5, C6-7.
No. 1335 Ship Wt. 10 oz.
$7.75

BIG BERTHA

SKILL LEVEL 1 Perfect kit for a "big" second rocket. Ideal for demonstration launches. Slow, realistic lift-off for really spectacular flights. 24″ from nose to tail. A real favorite of rocketeers. Length: 24″ Dia. 1.637″ Wt. 2.2 oz.
ENGINES: A8-3, B4-2, B4-4, B6-2 (1st Flt.), B6-4, B8-5, C6-5
No. 1223 Ship Wt. 10 oz.
$7.50

NIKE-X

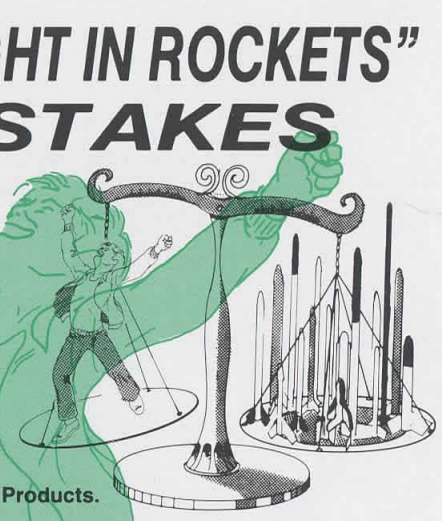
SKILL LEVEL 2 Scale-like single-stage model of U.S. Army's 4th generation, two-stage surface-to-air missile. Nike-style design with U.S. Army decor. Great performance for really impressive flights. Easy-to-assemble. Length: 23.4″ Dia. 1.325″ Wt. 2.3 oz.
ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.
No. 1270 Ship Wt. 12 oz.
$7.50

Engines, launch system, glue and finishing supplies not included in rocket kits.

"WIN YOUR WEIGHT IN ROCKETS" SWEEPSTAKES

25th ANNIVERSARY 1983

ESTES
A DAMON COMPANY



1st PRIZE: Win Your Weight In Estes Model Rocketry Products.

2nd PRIZE: Win 2/3rds Your Weight In Estes Model Rocketry Products.

3rd PRIZE: Win 1/3rd Your Weight In Estes Model Rocketry Products.

25 - 4th PLACE PRIZES: Win an AstroCam 110 Aerial Camera with Delta II Launch Vehicle.

100 - 5th PLACE PRIZES: Win a $10.00 Gift Certificate for Estes Model Rocketry Products.

RULES:

1. No purchase is required to enter.
2. You may enter as many times as you like.
3. Winners will be chosen entirely at random.
4. Winners will be required to submit proof of weight.
5. Employees of Estes Industries and members of their immediate families are not eligible.
6. Entries must be postmarked before midnight, June 30, 1983.
7. Contest drawing for winners will be held on July 15, 1983. Winners will be notified by mail and will be published in a future issue of Model Rocket News.
8. 1st, 2nd and 3rd place prizes will consist of a selection of Estes model rocketry products.
9. All names and addresses received on Sweepstakes Entry Forms may be used for mailing list solicitations.
10. This Sweepstakes is void where prohibited by law.
11. All entries should be mailed to: Estes Industries
    25th Anniversary Sweepstakes
    P.O. Box 227
    Penrose, CO 81240

To enter Just Fill-out and mail sweepstakes entry form below...

ESTES
A DAMON COMPANY

"WIN YOUR WEIGHT IN ROCKETS"
SWEEPSTAKES ENTRY FORM

NAME:_____

ADDRESS:_____

CITY:_____ STATE:_____ ZIP:_____

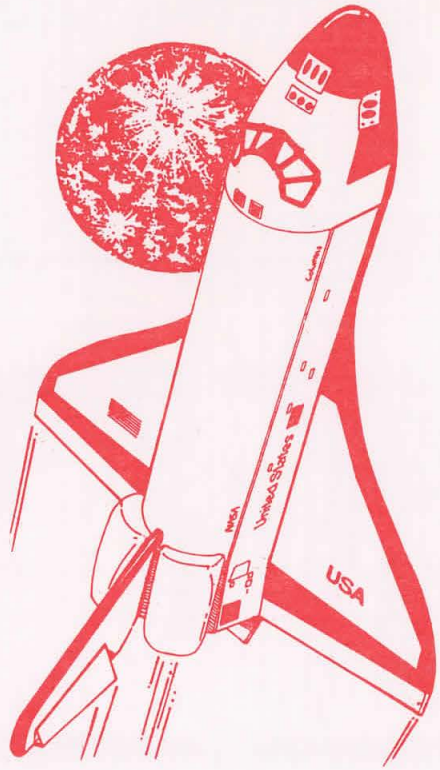
PHONE: ( ) _____ WEIGHT IN LBS.:____

All Entries Must Be Postmarked Before Midnight June 30, 1983.
No Purchase Is Required To Enter. Void Where Prohibited By Law.

Be Sure To Enclose Special Offer Coupons

Place Stamp Here

ESTES INDUSTRIES
"Model Rocket Capitol of the World"
PENROSE, CO. 81240 USA



HOW TO ORDER — FOLLOW THESE EASY STEPS FOR BEST SERVICE

This order form replaces all previous order forms. Please be sure that you use the correct and full catalog number for each item when you order. All prices are subject to change without notice. WHEN SENDING ORDER BE SURE TO GIVE ZIP CODE IN YOUR ADDRESS.

POSTAGE

Estes Industries ships all retail orders POST-PAID in the U.S. by regular land mail or UPS.

PAYMENT ON ORDER

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Your comments will assist us in providing you with better service and even more exciting products.

1. What types of scale models would you like to see Estes produce? _____
2. Do you prefer ☐Large or ☐Small size models?
3. Do you think Estes kits are generally ☐Easy, ☐Average or ☐Difficult to assemble considering their recommended skill level?
4. Are Estes kit instructions easy to follow? ☐Yes ☐No
5. Would you prefer more plastic parts for simpler assembly and better detail? ☐Yes ☐No
6. What Skill Level of kits do you prefer to build? ☐1 ☐2 ☐3 ☐4 ☐5
7. My three favorite types of model rockets are
   ☐Single Stage ☐Scale Model ☐Boost Glider
   ☐Sport Flier ☐Futuristic Design ☐Maxi-Brute
   ☐Mini-Brute ☐Multi-Stager
   ☐"D" Powered ☐Payload
8. I became interested in model rocketry because of:
   ☐a friend ☐film ☐gift
   ☐school ☐magazine ad ☐hobby shop
   ☐rocket club ☐saw a launch ☐department store
   ☐article ☐comic book
   ☐TV
   ☐other _____
9. My favorite type of scale model is:
   ☐Military Scale ☐NASA Scale ☐Sounding Scale
10. What product other than model rockets would you like to see Estes produce:
    ☐Electric RC Cars/ ☐Kits ☐Pre-Assembled
    ☐Powered Boats/ ☐Kits ☐Pre-Assembled
    ☐RC Airplanes/ ☐Kits ☐Pre-Assembled
    ☐U-Control Airplanes/ ☐Kits ☐Pre-Assembled
    ☐Solar Kits ☐Construction Sets
    ☐Slot Racing ☐HO Scale ☐1/32nd. Scale
    ☐Other _____
11. Age ____ Grade ____
12. ☐Male ☐Female

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Toward the Purchase of a Super D Engine Special (#1770)
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"Free" Solar Igniters (Pkg of 6) Worth $1.25 when you purchase any kit on pages 20 & 21
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"Free" C5-3 engines (pkg of 3 plus igniters) worth $3.25 when you purchase a Space Shuttle kit (#1284)
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HOW HIGH DID IT GO?

SAVE $1.00
ALTI-TRAK Altitude Finder Now Only
$6.50
See page 17 for Bonus Coupon

ALTITUDE FINDER
Skill Level 1
Track your rocket to the top of its flight and instantly lock-in its altitude on the "new" AltiTrak altitude finder. Displays exact model rocket altitude on metric scale—no guessing! (Conversion table included for feet.) A precision instrument made of durable plastic. Easy-to-assemble and looks like futuristic laser pistol. How high did it go? Now you'll know! Ship Wt. 15 oz.
No. 2232 **$7.50**

Super "D" Power Special

BIG $14.85 Value

Now's the time to stock up on these popular engines. Receive 3 ea. D12-3, D12-5, and D12-7 High Performance Estes Model Rocket Engines plus Igniters. A total of 9 powerful D Engines! Ship Wt. 2 lb.
No. 1770 **Only $11.88**

20% OFF!
SAVE $2.97
See page 17 for Bonus Coupon

PHOENIX

"FREE"
Recovery Wadding(#2274)
(2 Pkgs. of approx. 75 squares)
WORTH $2.60
when you purchase a Phoenix
See page 17 for bonus coupon

SKILL LEVEL 3 Big semi-scale model of the famous Phoenix air-to-air supersonic missile. Impressive in the air and on display. Single "D" power engine provides a slow, realistic lift-off and flights over 600 feet. Length: 30" Dia.: 2.60" Wt. 6.6 oz.
ENGINE: D12-3 (First Flight).

Engines, launch system, glue and finishing supplies not included.

No. 1380 Ship Wt. 30 oz.
$11.00

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Ideal Engine Assortment For the Active Rocketeer. Features 24 of The Most Popular Estes Model Rocket Engines, plus Solar Igniters and Parachute Recovery Wadding. Priced At An Excellent Savings.

"FREE"
12" Parachute
WORTH $1.35
with the purchase of
#1672 Blast Off Flight Pak
See page 17 for Bonus Coupon

$26.75 VALUE
SAVE $9.76

Includes:
Six 1/2A6-2 High Performance Model Rocket Engines
Six A8-3 High Performance Model Rocket Engines
Six B6-4 High Performance Model Rocket Engines
Six C6-5 High Performance Model Rocket Engines
30 Solar Igniters
One Pkg. Parachute Recovery Wadding **No. 1672**

ONLY $16.99

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See page 17 for Bonus Coupon

STAR SPEEDER

SKILL LEVEL 2 Single place galactic fighter capable of tremendous speed and maneuverability. The Estes version sports great performance with flights over 800 feet. Length: 13.75″ Dia. 0.736″ Wt. 1.3 oz.
ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.
No. 1366 Ship Wt. 12 oz.
$5.25

KADET

SKILL LEVEL 1 Achieve flights over 1,000 feet with this super high flying sport model. Nearly indestructible with pre-colored plastic nose cone and fin-unit. Quick and easy-to-assemble. No painting required! Easy-track recovery with 30″ fluorescent steamer. Length: 15″Dia. 0.98″ Wt. 1.13 oz.
ENGINES: 1/2A6-2, A8-3, A8-5, B4-4 (1st Flt.), B6-4, B8-5, C6-5, C6-7
No. 1328 Ship Wt. 10 oz.
$4.50

ASTEROID EXPLORER

SKILL LEVEL 2 Geological data gathering probe of the 1990's. Probes asteroids and other large masses for ore samples. Great display model and capable of flights over 1,000 feet. Length: 16.6″ Dia. 0.976″ Wt. 1.09 oz.
ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5, C6-7.
No. 1386 Ship Wt. 12 oz.
$5.00

COMET

SKILL LEVEL 1 High performance sport flyer over 2 feet long. Quick and easy-to-assemble. Delivers great flights over 1,200 feet. Length: 24.25″ Dia. 1.325″ Wt. 1.8 oz.
No. 1368 Ship Wt. 10 oz.
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FIRECAT

SKILL LEVEL 1 Authentic looking anti-tank missile of the future. Features unique scale-like plastic nose cone. Flights over 1,000 feet are possible with a C engine. Length: 15″ Dia. 1.04″ Wt. 1.5 oz.
ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.
No. 1378 Ship Wt. 8 oz.
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SKILL LEVEL 1 Reach altitudes over 600 feet with this great Mini-Brute sport flier. Very high performance design. Length: 12.1″ Dia. 0.736″ Wt. 0.51 oz.
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ESTES®

"FREE" C6-3
(Pkg of 3 w/igniters)
when you purchase
any Centuri kit on page 22
See page 17 for Bonus Coupon
WORTH $3.25

SR-71 BLACKBIRD

SKILL LEVEL 3 The SR-71 is the U.S. Air Force's long-range advanced strategic reconnaissance aircraft, capable of flying above 80,000 feet at three times the speed of sound. Includes D-convertible engine mount. Length: 27.5 in. Dia.: 1.64 in. Net Wt.: 6.6 oz.
ENGINES: C6-3, D12-5
No. 5349 Ship Wt. 1lb. 3 oz.
$13.95

THUNDER ROC

SKILL LEVEL 3 Longest kit in the Centuri line, the Thunder-Roc lumbers off the pad under either Super-C or Magnum D power. Convertible engine mount included. Length: 61.5 in. Dia.: 1.64 in. Net Wt.: 6.6 oz.
ENGINES: C6-3, D12-5.
No. 5340 Ship Wt. 1 lb. 3 oz.
$11.00

MERCURY REDSTONE

SKILL LEVEL 5 This beautiful 1/36th scale model of Freedom 7, America's first manned spaceflight, will make a fine addition to your rocket collection. It features a molded plastic Mercury capsule, escape tower, and lifts slowly off the pad—just like the real rocket. Length: 29 in. Dia.: 2.04 in. Net Wt.:3.7 oz.
ENGINES: C6-3
No. 5131 Ship Wt. 16 oz.
$13.95

Centuri

ESTES®

"FREE"
C6-3 ENGINES!
3 Pkgs of 3 with igniters
Total of 9 engines -
WORTH 9.75!
when you purchase a
Centuri Saturn V
See page 17 for Bonus Coupon

SATURN V

SKILL LEVEL 5 Over the past 12 years, the Centuri Saturn V has been acknowledged as model rocketry's finest scale Saturn. Over 43 inches tall, beautifully detailed right down to the vacuum-formed plastic body wrappers. Includes removable F-1 engine bell unit, molded plastic Apollo capsule and tower and three engine cluster power. Length: 43.6 in. Dia.: 3.96 in. Net Wt.: 9.2 oz.
ENGINES: (Requires three per flight) C6-3.
No. 5142 Ship Wt. 3 lbs. 5 oz.
$39.95

Centuri

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SPRING 1983
VOL. 23 NO.1
ESTES

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NARAM - 24

by Matt Steele

Estes Industries NARAM-24 Award Presentation

To the left is Vern Estes representing Estes Industries. In the center is the National Champion Team (Photon Team), Lam and Tam Pho from McLean, VA. To the right is NAR President Pat Miller.

The Photon Team has been active in hobby competition for a number of years. They have performed in national level competition for the past two years. Photo by Alan Williams courtesy NAR

NARAM 24, the National Association of Rocketry's Annual Meet, was held in Kissimmee, Florida, near Disney World and the Kennedy Space Center. Participants at the meet were treated to some of the finest flying model rocketry has to offer and many enjoyable vacation attractions.

The meet opened on Sunday, August 1, 1982, wiith a manufacturer's demonstration and launch. Jeff Flygare, the Estes representative, impressed the crowd with the latest and best new kits. Particularly breath taking was the flight of a Comanche – 3 as it soared into the clear blue Florida sky.

The first competition event was Predicted Duration, which was held on Monday. In this event, the modeler must predict how long his model will fly (the minimum guess of 30 seconds makes this a difficult event), and then fly the model. Several perfect predictions were made in this fun, wide open event.

Monday also saw D Super Roc Altitude, in which D powered models anywhere from 6' to 15' (similar to the Mean Machine) soar into the sky in an attempt to get the best altitude. It was an impressive event to watch, as many of the Super Rocs turned in flights in excess of three hundred meters.

Tuesday at the meet featured 1/2A International Boost Glide and C Helicopter duration. In the boost glide event, contestants try to attain three 120 second "max" flights with two models. Most of the models that worked best were based loosely on the same principle as the Estes Soaring Eagle. The team of George Gassaway and Matt Steele won the event by scoring three perfect "maxes".

In C Helicopter Duration, the models boost quite high, and then auto rotate to earth, much like a helicopter. Jim Zingler, of Tomah, Wisconsin, turned in the best flight of the day, at well over 5 minutes.

Wednesday saw A International Streamer Duration, an extremely popular and very competitive event. Jim Wilkerson, of Wheaton, MD, won this event in an exciting flyoff with two other competitors who had all scored "maxes". Jim's model was a small BT-5 model that used an accordian folded streamer.

B Rocket Glide is an event similar to the boost glide event, except that the model cannot drop its engine or eject a pod. Most popular of these type models is a type of glider that moves its wing into position at ejection. The winning time in this event was well over 4-1/2 minutes.

"LITTLE STINGER"

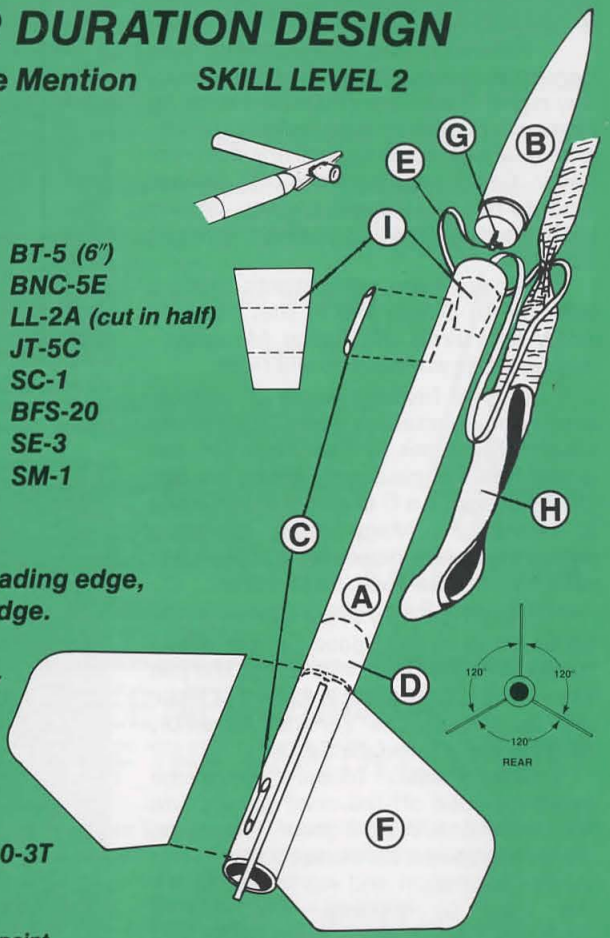
STREAMER DURATION DESIGN

Nov. 1981 Honorable Mention **SKILL LEVEL 2**

Robert & Paul Drapeau
Bellingham, MA

PARTS LIST

A	3070 Body Tube	BT-5 (6")
B	8000 Nose Cone	BNC-5E
C	2321 Launch Lug	LL-2A (cut in half)
D	3050 Engine Block	JT-5C
E	2276 Shock Cord	SC-1
F	3164 Fins (3)	BFS-20
G	2281 Screw Eye	SE-3
H	2341 Streamer 1"	SM-1
I	Shock Cord Mount	



Fins: 1/16" Balsa, Round leading edge, taper small trailing edge.

Paint: Body - Gloss Yellow
Nose - Black

Recommended Engine:

1/2A3-2T, 1/2A3-4T,
A3-2T, A3-4T (1st Flt.) A10-3T

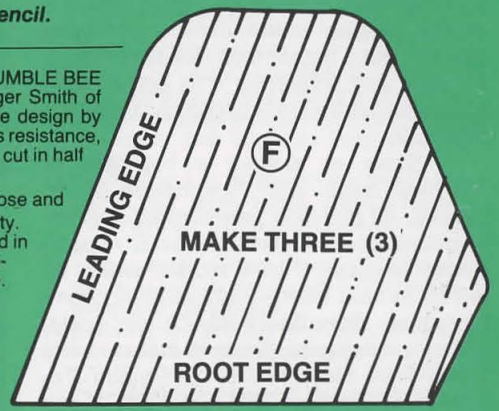
Additional Materials:

White glue, sanding sealer, spray paint, sandpaper, hobby knife, ruler, and a sharp pencil.

The LITTLE STINGER was inspired by the BUMBLE BEE winner of the January, 1980 design contest by Roger Smith of Brookville, Ohio. The LITTLE STINGER modifies the design by utilizing a BT-5 Body Tube for less bulk, Tri fins for less resistance, and a more rounded nose. The launch lug (LL-2A) is cut in half and trimmed back on each end.

For less drag, one piece is mounted near the nose and the other close to the tail. This provides launch stability. A basic shock cord can be used. The final model used in local competition used a parachute shroud line to provide more room for the streamer inside the body tube.

Using the A3-4T engine provided durations of about 43 seconds and a competition time of 42.51 placing it first in division on August 22, 1981 at the annual Needham (Mass) Park & Recreation Program.



Continued from page 24

NARAM - 24

Research and Development presentations were also given on Wednesday night. These are projects similar to research papers or science fair projects that deal with some aspect of model rocketry. Geoff Landis of the MIT Rocket Society had the winning project, dealing with the mathematics of glider flight on boost.

Many of the contestants made a side trip to Disney World that night to enjoy the thrills of "Space Mountain", among other attractions and rides.

Both a favorite event of contestants and spectators was C Eggloft Altitude. Dave Cook, of San Diego, CA, set a new national record by lofting his egg 282 meters on a C engine and returning it uncracked. Many other modelers weren't so lucky, however, and were left with egg on their face, so to speak.

That Thursday afternoon also featured a trip to the Space Center. Many rocketeers got their first look at the pad where the space shuttle Columbia lifted off, as well as the Vertical Assembly Building and a full scale Saturn V.

The Plastic Model Conversion event included off-the-shelf plastic kits like the F16, X-Wing Fighter, Galactica, Viper, and others converted to fly. In this event imagination and workmanship are the keys to winning. The winning Zunofark Team entry featured over 150 hours of work, and detail so fine that one of the judges asked for a magnifying glass to get a better look. Also spectacular was Jeff Vincent's F16 conversion, complete with a NAR patch on the pilot's flightsuit!

Scale is always a highlight of NARAM week, and Tom Hoelle of Ft. Wayne, IN had this year's most impressive model, a 4' tall Ariane European space booster. Tom's model, which he will fly at next year's international championships, flew flawlessly to win scale. Other prototypes present included the Saturn V, Saturn 1B, D Region Tomahawk, Aerobee 350, Viper, ASP and Sandhawk.

The Pulsar section of upper New York once again captured the section (club) national championships. Photo courtesy of Alan Williams. ©1982

NATIONAL AND RESERVE CHAMPIONS:

16 years and younger:

1) Kevin Kuczek, New Baltimore, MI
2) Ken Mizoi, Spring Valley, NY

16-18:

1) Chris King, Tomah, WI
2) Dave Gugick, Spring Valley, NY

18 and older:

1) Art Rose, New City, NY
2) Jeff Vincent, New Scotland, NY

Teams

1) Photon Team, Alexandria, VA
2) Zunofark Team, Homewood, AL

Club

1) PULSAR , New City, New York
2) NIRA , Chicago, IL

At the awards banquet Friday evening, the new national champions were crowned, and many special awards were given. This year's race to be the number one rocketeer in the country was very close, and wasn't decided until the last event in most cases. NARAM 24 was a fun meet, and most of the contestants agreed that the combination of rocketry and other vacation fun just couldn't be beat.

National Association of Rocketry

Don't miss out on the fun! JOIN TODAY

NAR MEMBERS RECEIVE ALL THIS:

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- **The NAR Pink Book**—68 page rule book for over two dozen rocketry contests!
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- **Attend NARAMS**—Spend an unforgettable week at the most exciting rocketry event; the NAR Annual Meet where rocketeers fly and compete from all over!
- **Set National and World Records**—Prove that you're the best and receive official recognition from the highest authorities.
- **Member Services**—Exclusive free and low cost items, such as manuals, booklets, plans, patches, special offers and more!

NAR

JOIN THE FUN!

For more information and a membership application write: NAR Headquarters, Dept. E13, 182 Madison Drive, Elizabeth, PA 15037

WIN $75.00 IN FREE MERCHANDISE!! ENTER THE DESIGN OF THE MONTH CONTEST

Have an idea for an original design? Enter our Design of the Month competition today. Your design could be published in an issue of Model Rocket News. Simply follow the rules below.

1. All entries become the property of Estes Industries and cannot be returned.
2. Employees of Estes Industries and members of their immediate families are not eligible.
3. Any type of model rocketry design can be entered (rockets, boost-gliders, launching or recovery devices, etc.).
4. Designs should be new, original, and different, but they also need to be workable. The goal is to develop something new that other rocketeers can build and use successfully, too.
5. Entries will be judged on practicality, originality, neatness, completeness, and clarity. All plans must be flight tested and proven.
6. Your design entry should include a parts list and any instructions or diagrams you feel would be helpful.
7. Please do not send the actual model as it cannot be returned.
8. Photos of entries are greatly appreciated, but are not required.
9. You may send as many entries as you like.
10. New contest every month.
11. All designs reaching Estes Industries during the calendar month will be entered in that month's competition. (Date of receipt, not postmark, will determine the month in which a design will be entered.)
12. If two or more exceptional entries are received during any month, the judges may, at their discretion, make identical first-place awards or give additional honorable mentions.
13. Designs should be sent to the Design of the Month, c/o MRN Editor, Estes Industries, Inc., Penrose, CO 81240. However, all plans sent to us which are not specifically addressed to another contest or department will be automatically placed in the Design of the Month Competition.
14. Each month the designer of the winning entry will receive a certificate entitling them to $75.00 in merchandise and an award certificate suitable for framing. Award winners will be notified by mail. **GOOD LUCK!!!**

Design of the Month
WINNERS

Congratulations to another fine group of Estes Rocketeers for their outstanding DOM entries. First place winners will receive $75.00 merchandise certificates. Keep those entries coming, maybe you'll be our next winner!

JUNE 1981—Winners: Eric Eiland, Orange Park, FL (Pasoe Interceptor). Kurt Womack, Prescott AZ (Y 88 Skyblaster). Glenn Kamholz, Marilla, NY (Diamond Back). Joe Casiglia, Troy, MI (Silver Streak). Matt Putnam, Forest City, NC (Delta II).Honorable Mention: Phillip Thompson, Oak Ridge, TN (Defeater A-1E Anti-Aircraft Missile). Deal Pilato, Warren, MI (Mach Wasp). James Flis, Merrimack, NH (Thunderbird). Shaune Zavertnik, Strongsville, OH (Maxi Pegasus A3). Joseph Pappas, Woodside, NY (Sirius). Bruce Gregory, Alanson, MI (Trioc). Richard Gomez, Flagstaff, AZ (Zemrog). Neftali Rivera, Anasco, Puerto Rico (Volans UU). Brandon Jackson, Carson City, NV (XR-71 Panther). Chris Thomas, Wyoming, DE (Cloud Scout). Richard Drummer, Orchard Park, NY (Black Falcon). Richard Bendt and Chris Olson, Minnetonka, MN (Meteor Launch Box).

JULY 1981—Winners: Neftali Rivera, Anasco, Puerto Rico (El Puntas). David Bishop, Gladewater, TX (Nerva I). Marty Wilkey, Bourbonnais, IL (Vector 3). Rick Behrens, Manchester, MO (Dual Pad Launch control Equipment). Gerard Niles, Hickory Hills, IL (Nighthawk). Jim Wheeler, Hobbs, NM (Zeus). Honorable Mention: Joe Mahoney, Whitesboro, NY (Star Destroyer). Andrew Bieniawski, State College PA (Golden Eagle). Stephen Dobro, Sharon, MA (F13). Brendon Schilling, Great Falls, MT (Targ IV). Stephen Dobro, Sharon, MA (Force 5). Jim Park, Dublin, GA (23° Boost Gliders). Patrick O'Neill, Temple Terrace, FL. Gary Smith, Talbott, TN (The Vulcan). Eric White, Cumberland, MD (Pepsi Rocket). Mark Heil, Clarkston, MI (Sonic Boom). James Little, Beaver Falls, PA (Multiple Launch System).

AUGUST 1981—Winners: Roger Gilbertson, Woodside, CA (MX Missle). Robert Drapeau, Bellingham, MA (Once Over Easy). Andy Hay, Mississauga, Ontario (Eagle). Honorable Mention: Stephen Dobro, Sharon, MA (Juggler 1). Danny Willard, East Baldwin, ME (Illusion). William Thorndike, Sartell, MN (Invader II). Charles Hyslop, York, PA (2 fer 1). Mark Mastandrea, Hebron, CT (Tri-Hex Missile). Bobby Atkinson, Raytown, MO (Defender). Christopher Scholes, Morrison, CO (Sun Devil). Steve Crews, Taylorville, IL (Payloader IV). Lee Fleming, Fresno, CA (Amitron). Alexander Clar, Loudonville, NY.

SEPTEMBER 1981—Winners: Akin Dirik, Holliston, MA (Capricorn). Theodore Dombrowski, Detroit, MI (Osborn Payloader). Douglas A. Britt, Richland, WA (Callisto I). Kris Bullock, Upland, IN (Nerva). Chris Ulad, Burlington, Ontario (Starfighter). Honorable Mention: Mark Dresser, Wyckoff, NJ (Blue Gladiator). Eugene Vielvoye, Kelowna, B.C. Canada (Bomberack). Sammy Lu, San Jose, CA (Skyrider). Don Griffiths, Dexter, MI (Witching Hour). Brent Cooper, Fort Wayne, IN. Ken Clements, Ocala, FL (UFO Interceptor). James Mullaney, Carnegie, PA (Sky Needle). Leonard Johnson, Park Ridge, IL (Arcturus I). B.C. Wyatt, Richmond, IN (Galaxia). Steven Krefetz, Morganville, NJ (Blue Lightning).

OCTOBER 1981—Winners: Louis Jiardina, Marion, IL. Tim Witkowski, Madison WI (Streamer). Randy Turnbow, Parker, AZ (Stinger M.T.). Honorable Mention: Robert Drapeau, Bellingham, MA (Spot Lander). Michael Godfrey, Duluth, MN (Triple Threat). Stephen Dobro, Sharon, MA (Bug). Donald Skrabel, Lake Bluff, IL (Bullet). John Townsend, Boynton Beach, FL (Rainbow Connection). Dennis McEntire, San Jose, CA (Top Secret). Mike McKinney, Jr., Sumter, SC (Rebel Excape Starship). Mark Grossman, Menomonee Falls, WI (X-7). Michael Rakes, Nebraska City, NE (Eggbert). Michael Rakes, Nebraska City, NE (Mongoose). Louis Jiardina, Marion, IL (Hawk Missile).

NOVEMBER 1981—Winners: George Carganilla, Simi Valley, CA (Hi Mat). Wendy Jiardina, Marion, IL (Star Probe). Jesse Waggoner, Bradley, WV (Jupiter C/Explorer I). Honorable Mention: James Givvons, Swoyersville, PA (Destroyer). Michael Bobo, Mt Pleasant, TN (Cloud Climber). Jeff Jonseck, Yale, MI (Launch Well). Frank Generoso, New York, NY (Sky-Scraper). Larry Klug, Jamaica Plain, MA (Phoenix). Bob & Paul Drapeau, Bellingham, MA (Little Stinger). Doug Smalara, Cincinnati, OH (Windjammer). William Chapman, Moore, OK (Armistice IV).

DECEMBER 1981—Winners: Michael Di Spezio, Catanmet, MA (T-4). David Hughes, Anacortes, WA (F-21 Wombat). Eric Houston, Wooster, OH (The General). Honorable Mentions: Nicolas Sarkis, Sorel Quebec, (CF-82). Jeff Geddings, Klamath Falls, OR (Phantom V). Dean Pilato, Warren, MI (Jupiter 4). Dennis McEntire, San Jose, CA (Rescue 3). Frank Vollone, Medinah, IL (Davea Sky Lab). Michael Fung, Portland, OR (U.S.S. Moonbaby). Stacy Wedel, Cordell, OK (The Jet).

JANUARY 1982—Winners: Mark Wampier, Davenport, VA (Moon Raker). Steve Nordahl, Woodinville, WA (Eagle III). Ken Peters, Columbia, SC (Thunderbolt 550). Honorable Mentions: Duane Couch, Coquille, OR (Manta Ray). D. Pileggi, Houston, TX (Tetrad-1). Darren Casteel, Fallbrook, CA (Para Dura). Todd Kurtzman, Tiburon, CA (Mohican Skunk). Jeff Gill, Brewster, WA (Galactic Enterprise IV). Stewart Zoock, Lake Worth, FL. Jeremy Stewart, Northbay Ont., (Pack Rat).

FEBRUARY 1982—Winners: Bill Hartsfield, Quincy, CA (M-33 Companion). Sean Clark, Petaluma, CA (Imagery). John Beggs, Franklin, PA (Galileo Flight). Honorable Mentions: Kenneth Roy, Mt. Laurel, NJ (520 Turbo). Cliff Willhoff, Tipp City, OH (XXOR). Mark Morales, San Francisco, CA (The Fly). Daniel Schroeder, Houston, TX (Quarterflash). David Cowan, Wichita Falls, TX (Prisma). Dave Domke, Billings, MT (DN 736 Artic Explorer). John M. H. Woodyard, Columbus, OH (XLI Missile).

MARCH 1982—Winners: Mike McKibbin, Richland, WA. Kenny Menchio, Douglasville, GA (Hunter). Wayne Perepolki, B.C. (Star Tooth). Brian Briggs, Plano, TX (Blue Phantom). David Bowman Hickam AFB, HI (Ripper). Alexander Meissel, Virginia Bch, VA (Caprika-3). David Hofmann, Los Alamos, NM (Sorceror). Cody Bradley, Jonesboro, IL (Nayton Voyager). Kenneth Roy, Mt. Laurel, NJ (Bullet). Jeff Courtney, Roy, UT (Orion Shuttle Trans.). Jeffrey Minor, Blackwater, VA (Super Star). Joey Ambrosio, Hicksville, NY (Hydra). Mark Perkins, Warren, OH (Sargent). Scott Pakin, Chicago, IL (Scanner 4-19). Kent Kuntz, Chelan, WA.

APRIL 1982– Winners: Wayne Lowing, Louisville, OH (Pulsar). Hank Herglotz, Tuscaloosa, AL (Screamin Demon). Jeff Wachtel, Ohiowa, NE (Guided Space Probe). Rocketeer (Astro Fighter). Chris Manning, Okla. City, OK (Star Spear). Honorable Mentions: Pete Bollinger, Pueblo, CO. Frank Liebgott, Plano, TX (USAF). Scott D. Branche, Scarsdale, NY (Green Goblin). Charlie Locke, Flat Rock, MI (Hornet). David Sherak, Irvine, CA (Tele-Star). Rob O'Brien, Castroville, CA (Lightning Bolt). Theodore J. Dombrowski, Detroit, MI (Finless Rocketry).

Design of the Month winners continued on page 29.

THE IDEA BOX

Printing your name and phone number on your rocket's parachute may help assure its return if lost.

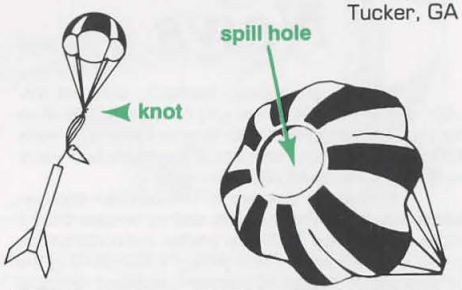
Ben Behler
St. Paul, MN

To protect the life of your batteries between launches keep them in the refrigerator.

Nicholas Reiter
Philadelphia, PA

If the parachute you are using does not allow your model to come down fast enough, tie a knot in the middle of the shroud lines or cut a hole in the center of the parachute.

Harvey Tom
Tucker, GA



Keep a copy of the Model Rocketry Safety Code with you during all your model rocketry activities. It may be taped inside your range box or laminated in clear plastic for easy reference.

Michael Eberhart
Cuyahoga Falls, OH

MAY 1982—Winners: Lester Womack, Prescott, AZ (Accipiter 8). Dean Pilato, Warren, MI (Ganymede). Chris Donahue, Northport, AL (Peppermint Twist). Paul Geremia, Meriden, CT (AFT Par. Deploy. System). Jennifer Fortin, Arlington, TX (Lady Bug). Honorable Mention: Jeffrey Wells, Strafford, MO (Bronco). Robert Robba, San Jose, CA. Antonio Eclevia, Jefferson, LA (F-11-F Eagle). Jason Moss, Tacoma, WA (Gemini III). Craig Kellogg, Buckley, MI (Golden Rod Tripoly). Alan Herford, Munising, MI. Anthony Renzette, Newark, DE (Black Death). Pat Cochran, Newark, DE (Steward I). Darren Kew, Newark, DE (Space Fury).

JUNE 1982—Winners: Mike Williams, Houston, TX (Star Voyager). Robert C. Preiss, Philadelphia, PA (Sagan I). John Holtz, Pleasantville, PA (Phantom Glider). John Kwiecien, Mesa, AZ (Mod Rckt Design Flowchart). G.J. Nelson, Yakima, WA (S M 2). Doug Zent, Garland, TX (Intrepid). Michael Svec, Berwyn, IL (Launch Complex 7A). Rhett Rodewald, Colo. Springs, CO (Swing Wing). Rick Martinko, Chagrin Falls, OH (Warlock). Lee Ray, Houston, TX (Zeus). Stephen Barnes, Kerny, NJ (Condor). Robby Owen, Deer Park, TX. Andrew Ditchfield, Columbus, GA. Von Logan Brimhall, Provo, UT (Perceus). Steve L. Jones, Jr., Los Angeles, CA (Ranger III). Jason Biernat, Sherwood, OR (Starfire). Mark Dooley, Eagle, ID. Robert L. Gleiser, Sandpoint, ID (Prometheus).

JULY 1982 —Winners: Paul Frontczak, Boulder, CO (Blue Lightning). Mark Gaskill, Louisville, KY (Enforcer-One). Richard Gilles, Littleton, CO (Comorant 6). Timothy Henning, Princeton, IL (Black Knight). Dean Pilato, Warren, MI (Trinary). David Talso, Brooklyn Park, MN (Saberbat). Patrick Graham, Huntsville, AL (Futura). Honorable Mention: James Koury, Jr., Independence, OH (Lunar Laser). Craig Christopherson, Eau Claire, WI (Cosmic Eliminator). Josef Wegner, Penna Furnace, PA (Goddard-1). Matt Haag, Phoenix, AZ (M.A.D. Ajax). Brooks Lame, San Gabriel, CA (Commander). Scott Branche, Scarsdale, NY (Black Widow). Richard Sassone, Rochester, NY (Firefly). Timothy Smulders, W. Simsbury, CT (Sev). George W. Bell, Canon City,, CO (Nullifier). Joseph Pope, Pfafftown, PA (Effect of Streamlining). Timmy Edwards, Bastrop, LA (Talon).

AUGUST 1982—Winners: David Bostwick Binghamton, NY (Nighthawk). James E. Hamman, Independence, OH (USAF Planetary Transport). Paul A. Harmon, Durham, NC (Xerxes II). John R. Johns, Charlotte, NC (Corporal). Allen Krueger, Lincoln, IL (Baron). Phillip Thompson, Oak Ridge, TN (T-13 Avenger). James E. Fesmire, Northport, AL (Ringyr). Honorable Mention: Steven E. Williams, Chester, NJ (Air-Flow Ring). Aaron Metz, Lancaster, CA (Maxi Blue Bird Zero). Kevin Laird, San Jose, CA (Exocet II). David Bava, Mt. Clemens, MI (U.F.O.). David Pelke, Glendale, AR (Nighthawk). Ken Boggs, Mableton, GA (Destroyer). Chester Sakaski, Jr., E. Elmhurst, NY (X-20). Paul A. Nelson, Florence, WI (Delta Skyrocket). Andre Sr. Laurent, Green Bay, WI (Fire Fox). Rob Black, Honea Path, SC (Eagle Commander). Anil Kokaran, Trinidad, West Indies (Galaxia Starfighter).

SEPTEMBER 1982—Winners: Martin Bazant, Kenilworth, IL (Gemini II). Ampee Grewal, Calgary, Alberta (Spiral Conductor). T.C. Stan, Fairfield, CT (Gnat). Richard Podlaski, Selden, LI NY (Sentinel). Scott Krusemark, Hutchinson, KS (Control Center). John Busey, Spencer, IA (Saturn 1B). Honorable Mention: Geronimo Miramontes, La Puente, CA (Luz). Orang Kashi, Mill Valley, CA (Space Master). Craig Joiner, Barnesboro, PA (Beast). N.S. Grewal, Calgary, Alberta (Star Cruiser). Mike Barenberg, Englewood, CO (Stardust). Doug Baker, Thurmond, MD (Rocinante). Rob Black, Honea Path, SC (Blue Streak). Pat Herbison, Villanova, PA (Zenith).

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Should your article, idea or cartoon be used in MRN, we'll reward your efforts and talents with an Estes Merchandise Certificate, the amount of which will be determined by the MRN editorial staff.

Hope to hear from you soon!

MRN and free goodies for you!

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Space Shuttle

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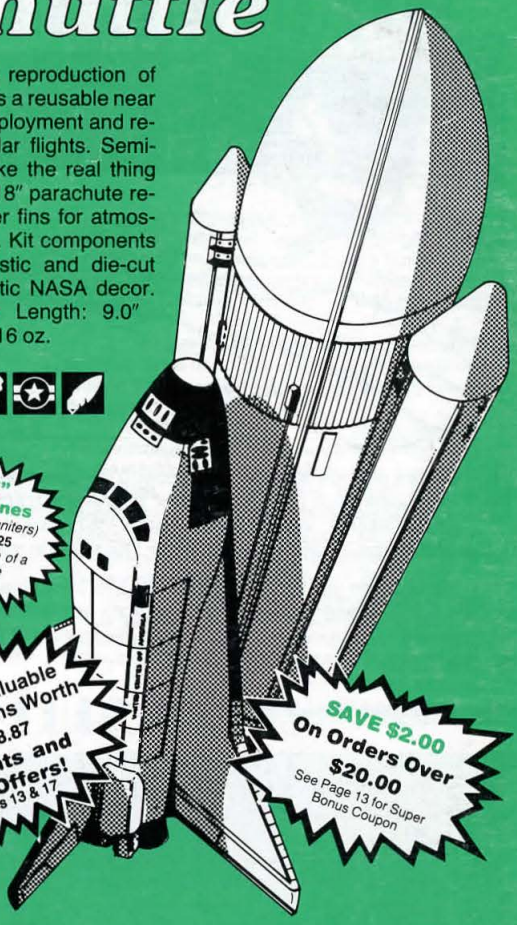

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